

PRESS RELEASE

**CANCER STEM CELLS : THE NEW TARGET FOR THE RESEARCH**

Milan, 27<sup>th</sup> June 2005 – “At last, we have a new great target for our research activities: cancer stem cells”, stated today Professor Umberto Veronesi, Scientific Director of the European Institute of Oncology of Milan, during the annual presentation of IEO research results and programmes. “Cancer stem cells are simply cells that are more undifferentiated than others and that are able to feed the cancer. They may be considered the cancer’s “food reservoir”. Being able to act on this reservoir may, therefore, represent the final turning point for a global solution of the problem of neoplasies. On this front, the Department of Experimental Oncology of IEO is committed with first-line tasks”.

These “cancer-generating” cells have been called stem cells; they show characteristics that reproduce the biological model of normal tissues in the cancer. They are cancer cells whose existence is indirectly confirmed by clinical observations that the research could not explain. For example, the reappearance of the illness after years, even when chemotherapy seemed to have been effective in eradicating it. Or, on the contrary, in cases of breast cancer, the few bone metastases that develop, compared to the great number of patients who show cancer cells in their bone marrow. The confirmation of the hypothesis may also why the dissemination doesn’t always end in a neoplasia: many metastatic hotbeds don’t show the ability to develop, as they don’t contain cancer stem cells.

The discovery of the existence of these cells may unveil the mechanism of cancer metastases and allow the production of drugs able to prevent their formation. Being able to multiply indefinitely, cancer stem cells feed the illness; if we can strike them with specific drugs, we will be able to attack the cancer at its roots and prevent it to produce the real mortal danger linked to cancer: the metastasis.

The discovery of these deadly cells, able to make the cancer reproduce, is a great progress, as it allows us to identify the target in a better way. Now we need a better characterization of surface markers, and of all that can help us to discriminate cancer stem cells from the others. We need a safe and relatively simple method to perform this task. We need a “system of signs” for cancer. We we have it, we will be